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## ABSTRACT

The rapid adoption of computers for story writing by the mass media revolutionized some aspects of the journalistic art. A survey of journalism programs assessed the spread of computer technology from the newsrooms to its college and university journalism classrooms. Of the 271 institutions responding to the survey, 220 had adopted computers and only two were unconvinced that computers offered any advantages over typewriters. Most institutions computerized their instruction in the 1980s but limit their use of computers to word processing. There appears to have been little use of computers to explore or enhance the process of writing engaged in by students of journalism. It is clear that within the next few years virtually all journalism programs will, to a greater or lesser degree, be computerized. It remains to be seen if this will change the way journalism writing is taught. (RS)

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COMPUTERIZATION  
AND  
U. S. COLLEGIATE JOURNALISM EDUCATION:  
A PRELIMINARY REPORT

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COMPUTERIZATION AND U. S. COLLEGIATE JOURNALISM EDUCATION:  
A PRELIMINARY REPORT

Introduction

This paper contains the results of a survey of United States colleges and universities with journalism programs designed to help assess the spread of computer technology from the country's newsrooms to its college and university journalism classrooms.

Until recently, print journalists practiced their art in the belief that technology was only another something to write about. But the rapid adoption of computers for story writing by newspapers, magazines, radio and television stations revolutionized some aspects of the journalistic art of story production.

Keyboard skills became more important because what the journalist wrote could become literally the type in the next day's newspaper. No longer was a journalist's news copy retyped by a typesetter. When newsrooms became computerized, most also replaced hot-metal typesetting with photo typesetting, the process that made it possible to directly place the journalist's keystrokes in the newspaper.

Computer skills became part of the journalist's art. Cutting

and pasting parts of stories into a coherent whole were replaced by issuing computer commands that electronically rearranged a story.

As the news industry adopted computers, it became logical and imperative for journalism programs to do likewise since much of their mandate involves preparing undergraduates to work in the news industry. So computerized writing laboratories began to replace typewriter laboratories in journalism departments on college and university campuses throughout the country during the 1970s (Lee and Perruso, 1977).

Of course, students and teachers had to adjust to this new technology and, at times, some wondered if it was all worthwhile (Renfron and Maittlen-Harris, 1986; Sachsman, 1986). To aid teachers in their transition to computerized classrooms, William R. Oates, an associate professor in the School of Communication at the University of Miami, established a clearinghouse for information on computerized journalism teaching and has published regular columns of such information ((Oates, 1987a, 1987b, 1985, 1983).

Some of the changes have been as fundamental as the relabeling of writing itself. "Writing" in the jargon of the computer industry is "word processing" and this became the core use of computers in journalism programs. It allows a typed mistake to be instantly corrected and, with almost as little effort, sentences and paragraphs can be moved around inside stories. Other publishing functions, such as typesetting (Zurek,

1985) and page and graphic design (Norvelle and Abrams, 1985) can be done using computers, but writing remains at the heart of the computer revolution in journalism education in this country.

While this collegiate computerization was largely driven by the computerization of the news industry, there was a parallel revolution (or, perhaps, evolution) developing in the teaching of writing that could further change the way journalism schools and departments teach their students to write and further enhance the value of computerization.

This writing revolution followed interest shown by linguists, psychologists, psycholinguists, rhetoricians and english teachers in the nature of the writing process. The paradigm shift in psychology in the late 1950s and early 1960s away from behaviorism, with its low level of interest in the exact nature of mental activities, to cognitive science, whose essence was the nature of mental activity, caused this interest in writing . Writing was attractive to cognitive investigators since it appears to be a universal human mental activity that had not been subjected to much empirical investigation.

Writing was traditionally taught as a linear process in which the writer first planned what he wanted to write, then collected his materials and produced the story. ) This story, the product of the writing activity, was looked at as the chief measure of writing. In many journalism programs, this is still the model of writing used to design writing programs

(Olson, 1987).

Cognitive studies of writers, some using a technique known as think-aloud protocols, have developed much different models of how writing occurs (Hayes and Flowers, 1980; McCutchen, 1984; Hansen and Wilcox, 1984; Hull, Glaser, Lesgold and Bartholomae, 1986). Perhaps the most widely adopted model [Although other "process" models have been developed (Scardamalia and Bereiter, 1986)] is that developed by Hayes and Flower in which many recursive steps are seen occurring situationally among the planning, translating and reviewing functions as the writer, in his existential environment, constantly reviews and revises his goals and his text.

These "process" models call the attention of writing instructors to the various phases and interaction among phases along the way to producing written texts and away from exclusive interest in the final text.

English composition literature is full of references not only to the writing process but how computers can aid students in mastering that process (Selfe, 1982; Schwartz, 1983; Sommers, 1984; Stine, 1985; Strickland, 1985). This literature also warns of pitfalls and concerns in computerized writing instruction (Barker, 1985; Dobrin, 1985; Jeger, 1985; Selfe, 1985).

The discussion of process-versus-product in writing instruction is just beginning to enter the journalism literature and has yet to be conjoined with the computerization literature in that field.

This survey seeks to explore the use of computers in journalism education and, in so doing, see to what extent departments are prepared for or are engaged in process-oriented instruction. Specifically, the questions to be explored are:

\* How many United States colleges and universities teaching journalism are using computers to teach courses and why have the others not adopted computers?

\* How broadly are computers used at those colleges and universities that have adopted this technology? What fields of study integrate computers into course work?

\* Which parts of the writing process (as they envision the process) are aided by computer use and which are not? Does this suggest a "process" or a "product" orientation?

\* What do computer-adopting journalism departments see as the benefits gained by and the drawbacks imposed on faculty and students from the use of computerized writing?

\* What do these computer-adopting institutions see as their future uses of computers in writing instructions?

\* Are software manufacturers meeting the current needs of these journalism departments and anticipating their future needs?

Are there products available that journalism departments are not using but should? What products are software manufactures developing specifically for journalism departments?

This is a report on answers to some of these questions.

### Purpose of Survey

Since we were interested in learning how computers were being used at United States' colleges and universities to teach journalism, we had to construct a survey instrument that would give us this information. We wanted an instrument that would also not be so daunting as to dissuade busy college and university administrators from participating.

It was decided that we would limit our questionnaire to both sides of one page. After some discussion of whether the questions should be open-ended or closed-ended, it was decided that all of the questions would be open-ended so that we could get the broadest range of responses.

### The Questionnaire

The following information was requested from each institution:

- \* Institution's name;
- \* The exact name of the department in which journalism is

taught;

- \* The department's address;

- \* The name of an individual with whom we could make contact if necessary;

- \* A departmental telephone number;

- \* The number of students in the journalism program;

- \* Whether computers are used for writing instruction in any journalism or mass communication courses. If no computers were used, we asked why not. All the rest of the questions were directed at those who did use computers for writing instruction;

- \* Listing the specialties of newspaper, magazine, public relations, broadcast and leaving an area for "other," we asked for the specific uses computers were put to in each area that was taught at the institution. As examples of these specific uses, we parenthetically listed "fact-gathering, planning, word processing, spell checking, text editing, text analysis, etc."

- \* The specific year when each computer application was begun;

- \* Which word processing programs were used and why;

- \* What other software is used in computer-assisted writing instruction;

- \* To which parts of the writing process (planning, fact-gathering, writing, revising, editing, etc.) are computers applied now and which are anticipated in the future;

- \* What are the major benefits to students and staff from using computers in writing instruction;

- \* What are the major problems for students and staff in using computers in writing instruction;
- \* What future uses of computers do you foresee;
- \* What kinds of software would you like to see developed.

### The Population

This questionnaire was circulated among several persons in the College of Communication at the University of Texas at Austin who either teach journalism writing or have done writing research. The questionnaire was changed to reflect many of their suggestions.

In order to reach as many college and university journalism programs in the United States as possible, it was decided to use as a source the 1987 edition of the Journalism & Mass Communication Director published by the Association for Education in Journalism and Mass Communication. This directory lists not only departments with AEJMC members but also those other departments known to the organization to teach journalism courses. Surveys were sent to some unlisted colleges and universities known to the researcher or associates to teach journalism.

In mid-September 1987, survey packets each containing the questionnaire, a cover letter and a stamped addressed envelope for returning the survey were mailed to 365 colleges and universities throughout the United States. A month later, a

second packet was sent to those institutions from among the 365 that had not responded to the first mailing. Selective telephone inquiries were made after the second mailing until we had received completed questionnaires from 271 colleges and universities. This is a response rate of 74.2 percent.

### Basic Findings

#### 1. Adoption of Computers:

Of the 271 responding institutions, 220 (or 81.1 percent) had adopted computers for teaching journalistic writing. Almost all of the non-adopters who gave reasons for not computerize said they would like to adopt computers but were unable to because of lack of funds. Two non-adopters wrote that they were unconvinced that computers offered any advantages over typewriters.

#### 2. Applications

Under the general classification of Journalism fall several specialization that many institutions view as separate divisions, departments or operations. In attempt to see if this specialization had effects on the use of computers, the

questionnaire was structured so that each institution could respond for the way it uses computers for teaching students in newspaper, magazine, public relations or broadcast specializations.

The following are the uses institutions said they make of computers in each concentration, rank-ordered and followed in parentheses by the number of mentions for each use:

For newspaper:

- \* Writing or word processing ( 187 );
- \* Editing ( 142 );
- \* Fact gathering ( 36 );
- \* Layout / Design ( 31 );
- \* Checking spelling ( 26 );
- \* Planning ( 17 );
- \* Desktop Publishing ( 11 );
- \* Typesetting ( 10 );
- \* Text analysis ( 9 );
- \* Tutorials or simulations ( 4 );
- \* Record keeping ( 1 ).

For magazine:

- \* Writing or word processing ( 70 );
- \* Editing ( 52 );
- \* Layout / Design ( 20 );
- \* Fact gathering ( 12 );
- \* Checking spelling ( 12 );
- \* Planning ( 8 );
- \* Typesetting ( 6 );
- \* Desktop publishing ( 5 );
- \* Text analysis ( 5 );

For public relations:

- \* Writing or word processing ( 81 );
- \* Editing ( 37 );
- \* Layout / Design ( 20 );
- \* Checking spelling ( 13 );
- \* Fact gathering ( 8 );
- \* Desktop publishing ( 8 );
- \* Planning ( 8 );
- \* Text analysis ( 4 );
- \* Typesetting ( 4 );
- \* Tutorials or simulations ( 3 ).

For broadcast:

- \* Writing or word processing ( 52 );
- \* Editing (28);
- \* Checking spelling ( 10 );
- \* Planning ( 7 );
- \* Fact gathering ( 6 );
- \* Text analysis ( 3 );
- \* Record keeping ( 3 );
- \* Layout / Design ( 2 );
- \* Typesetting ( 2 );
- \* Tutorials ( 2 ).

For all specializations within journalism, writing and editing, the two main functions of word-processing programs, are the most frequent uses to which journalism educators put computers in classrooms.

### 3. Years of Adoption

Of the 220 adopting institutions which responded, 22 institutions had adopted computers before 1980. Since then, the frequency of adopting computers by American colleges and universities for teaching journalism writing has been:

- \* 8 institutions in 1980;
- \* 6 institutions in 1981;
- \* 6 institutions in 1982;
- \* 23 institutions in 1983;
- \* 24 institutions in 1984;
- \* 43 institutions in 1985;
- \* 42 institutions in 1986;
- \* 40 institutions in 1987;
- \* 3 institutions by early 1988.

#### 4. Writing Process

Beyond the fact of computerization, the survey attempted to get at how instructors thought computers had helped in the teaching of journalistic writing by asking which parts of the writing process were aided by computers. The question, like all others on the survey, was open-ended and the responses varied in length, focus and terminology. Each answer was categorized and coded. Table 1 gives the results. Duplication and recoding account for the high count in some categories.

Table 1  
Where in Writing Process Computers Help

| Process                 | No. of Mentions |
|-------------------------|-----------------|
| Editing/Revision        | 282             |
| Writing/Word processing | 170             |
| Fact gathering          | 46              |
| Planning                | 33              |
| All areas               | 19              |
| Layout/Design           | 17              |
| Checking spelling       | 12              |
| Desktop publishing      | 6               |
| Typesetting             | 4               |
| Text analysis           | 3               |

#### 5. Benefits of Computerization:

Within the context of computer use, educators were asked what they view as the benefits of computerization in their classrooms. Those who answered gave the following replies, again

rank ordered followed in parentheses with the number of replies:

- \* Providing job skills or simulate work environment ( 117 );
- \* Revision capabilities ( 94 );
- \* Ease and efficiency of use ( 77 );
- \* Speed (48 );
- \* Clean copy ( 39 );
- \* Enhances teaching ( 15 );
- \* Networking ( 11 );
- \* Flexibility ( 7 ).

#### 6. Problems of computerization:

The responding educators from computerized institutions were also asked to name the problems they have experienced with computer use in the classroom. Their rank-ordered replies are:

- \* User inexperience or anxiety ( 117 );
- \* Equipment failure ( 57 );
- \* System not always available when needed ( 34 );
- \* Cost ( 24 );
- \* Frequent need to upgrade system ( 6 );
- \* Incompatibility among systems ( 5 );
- \* Proper security ( 3 ).

#### 7. Further Analysis

##### A. Program Size:

In an effort to see how the size of journalism programs relates to computerization, the programs were divided into groups of small, medium and large programs. For convenience, the "small" programs are those with 100 or fewer students in journalism courses. The "medium" programs are those with between

101 and 400 students. The "large" programs are those with more than 400 students.

Dividing the programs this way produced 112 small programs, 106 medium programs and 53 large programs. The following table shows the extent of computerization among these program types.

Table 2  
Computerization by Journalism Program Size

| Program Size | Total Programs | Computerized | % Computerized |
|--------------|----------------|--------------|----------------|
| Small        | 112            | 82           | 73 %           |
| Medium       | 106            | 89           | 84 %           |
| Large        | 53             | 49           | 92 %           |
| Total        | 271            | 220          | 81 %           |

#### B. When Schools Computerized:

Schools were asked to give the year in which they accomplished computerization of their journalism writing programs. Table 3 shows the responses.

Table 3  
Years Journalism Programs Computerized

| Year          | Number of Schools |
|---------------|-------------------|
| Before 1980   | 22                |
| 1980          | 8                 |
| 1981          | 6                 |
| 1982          | 6                 |
| 1983          | 23                |
| 1984          | 24                |
| 1985          | 43                |
| 1986          | 42                |
| 1987          | 40                |
| 1988          | 3                 |
| No year given | 3                 |
| Total         | 220               |

### C. Size of Program and Computerization

The overall computerization figures were then broken down by program size. Table 4 gives the results.

Table 4  
Program Computerization by Year and Size  
Program Size

| Year                 | Small | Medium   | Large    |
|----------------------|-------|----------|----------|
| Before 1980          | 1     | 12       | 9        |
| 1980                 | 3     | 3        | 2        |
| 1981                 | 4     | 1        | 1        |
| 1982                 | 1     | 4        | 1        |
| 1983                 | 10    | 8        | 5        |
| 1984                 | 10    | 8        | 6        |
| 1985                 | 18    | 21       | 4        |
| 1986                 | 17    | 15       | 10       |
| 1987                 | 17    | 14       | 9        |
| 1988                 | 1     | 1        | 1        |
| <u>no year given</u> |       | <u>2</u> | <u>1</u> |
| Total                | 82    | 89       | 49       |

As Table 4 shows, the rate of computerization in all programs increased markedly in 1983 and took another jump for small and medium-sized programs in 1985 and thereafter.

### Discussion

As a general statement the results of this survey show that the teaching of journalism writing in U. S. colleges and universities is computerized. This massive computerization is a phenomenon of the 1980s. Perhaps as a result of this recency or because of a shortage of appropriate software, most institutions have so far limited their use of computers to word processing and

editing.

It appears that the debate over teaching writing by concentrating on process or product is either too new to or virtually absent from the teaching of journalism writing. The responses to inquiries about this were so scattered and unspecific as to indicate that the division between product and process is not clearly perceived to apply to news writing, perhaps because process and product in news writing are so intertwined and reactive.

While word processing programs are an advance over typewriters in that they allow instant correction and editing, it appears that the major stimulus for the adoption of computers is the widespread computerization of the media. Well over half of the responding institutions that have computerized said that the adoption allows them to simulate actual newsrooms. There appears to have been little use of computers to explore or enhance the process of writing engaged in by learning journalists. Several institutions expressed a desire to hook their computers to data bases to introduce students to modern fact-gathering techniques. But there were few references to the need for text analysis or simulation programs.

And it appears clear that within the next few years, virtually all journalism programs in this country will be to a greater or lesser degree computerized. It remains to be explored exactly how or if this will change the ways in which journalism writing is taught. Clearly computerized composition is different

from composing on a typewriter. And these differences may extend beyond superficialities to the way in which stories are conceived, reported, composed, revised, written, submitted and edited. These differences, in turn, may require not only new approaches to teaching but also new software to enhance these new approaches. Because the computerization of U. S. collegiate journalism programs was largely stimulated by the computerization of the U.S. media, it may be natural and necessary for those in both area, academia and the professional media, to join in searching for these effects of computerization and suggest appropriate adaptation in the training of journalists.

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